ATTACHMENT J.4.78

CONFIGURATION MANAGEMENT, PL-3035

CONTROL NUMBER: FER-0752

SITE PROCEDURE CM-0001

REVISION NO. 3

CONFIGURATION MANAGEMENT

CM-0001

Effective Date: August 15, 1997

Originator (Subject Expert): F. T. Jobens — Date: 8/11/97

Checker Concurrence: W. E. Kortier — Date: 8/11/97

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FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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LIST OF ATTACHMENTS

RECORD OF ISSUE/REVISIONS

DATE	REV. NO.	DESCRIPTION AND AUTHORITY
11/15/93	A	New procedure required by the Engineering division to describe how to implement the FERMCO Configuration Management Plan, Document No. PL-3035 in Engineering design activities. Initiated by S. Reutcke, SME - W. Kortier.
09/23/94	0	Revision by S. Reutcke expanding Design Reconstitution and Change Control.
07/28/95	1	Revision clarifying implementation of Configuration Management, initiated by W. Kortier.
04/29/96	2	Revision clarifying implementation of Configuration Management, initiated by K. Solomon.
08/15/97	3	Revision aligning the procedure with the re-engineered Fluor Daniel Fernald. (FDF) organization. Initiated by Chris Olbur.

1.0 PURPOSE

This procedure establishes the guidelines for identifying, managing, tracking, reporting, and assessing the impact of technical activities throughout Fluor Daniel Fernald, (FDF) in accordance with the Configuration Management (CM), Presidential Policy and by the FDF Configuration Management Plan, Document No. PL-3035.

2.0 SCOPE

This procedure is applicable to all technical design/engineering activities performed or managed by FDF. The controls described herein shall be utilized by all FDF Divisions for accomplishing related activities which are identified under the Configuration Management program.

3.0 REFERENCES

1. PL-3035, "Configuration Management."
2. NS-0003, "Safety Assessment Hazard Screening and Classification"
3. ED-12-4004, "Design Package"
4. ED-12-4010, "Design Verification"
5. ED-12-4012, "Facility Engineering Projects"
6. ED-12-4015, "Performance Grading" (PG)
7. ED-12-5001, "Engineering/Construction Document Control" (ECDC)
8. ED-12-5002, "Engineering Design Change Processes"
9. MS-1021, "Project Management"
10. QA-0001, "FDF Nonconformance Identification and Tracking System"

4.0 RESPONSIBILITIES

Configuration Management Functional Area Manager (CM-FAM) - Has overall responsibility for the implementation of CM at the FEMP. Establishes the CM process by assuring compliance with this procedure by all FDF personnel.

Project Manager (PM)/ Project Engineer (PE) - Responsible for implementing this procedure for all new FEMP Projects and for changes to existing and ongoing FEMP Projects.

4.0 **RESPONSIBILITIES** (cont.)

Vice President Facility Closure And Demolition Projects (VP-FC&DP) - Assures implementation of the CM process within the Facility Closure and Demolition Projects Division.

Vice President-Soils and Water Projects (S&WP) - Assures implementation of the CM process within the S&W Projects Division.

Vice President-Oversight and Program Integration Division (VP-O&PI) - Assures implementation of the CM process within FDF.

Vice President-Silos Projects (SP) - Assures implementation of the CM process within the SP Division.

Vice President-Waste Management and Technology Projects (WM&TP) - Assures implementation of the CM process within the WM&TP Division.

5.0 **GENERAL**

5.1 Configuration Management (CM) is the management process by which the technical baseline for SSCs are identified, documented, tracked, and managed. CM establishes consistency among requirements, documentation and physical configuration, and maintains this consistency throughout the life-cycle, particularly as changes are made. CM also ensures the systematic evaluation, coordination, disposition, documentation, implementation, and verification of all changes, and their impact on and technical baseline.

5.2 CM is implemented through five basic program elements; Program Management, Design Requirements, Document Control, Change Control, and Assessments. Two special adjunct program elements are design reconstitution and material condition and aging.

5.3 CM as a management process begins once the functional requirements and technical baseline are established at Project design initiation, and continues through Preliminary (Title I) Design, Definitive (Title II) Design, construction, start-up, operation, maintenance, and Decontamination & Decommissioning.

5.4 Engineering activities, whether remediation or facility support, will impact existing FEMP Facilities. Therefore, Preliminary (Title I) Design activities shall include the identification of impacted FEMP Facilities, and assembly and evaluation of the existing design information for these Facilities against the design bases and planned use (Design Reconstitution). As a result, a Performance Grade (PG) will be assigned to each Structure System or Component (SSC) based on the steps outlined in Site Procedure ED-12-4015, "Performance Grading," The PG so established will be consistent with DOE, EPA, and FDF safety requirements and mission considerations.

6.0 PREREQUISITES

6.1 The TECHNICAL REVIEW BOARD (TRB) will review and evaluate the performance grade design package in accordance with this procedure and Site Procedure ED-12-4010 (as required) and validate the appropriateness of assigned PG's especially where a SSC was assigned a PG lower that the Facility Hazard Category (HC) as assigned by the Safety Analysis Department. Management considerations of mission impact and complexity will also be evaluated.

6.2 The PROJECT ENGINEER (PE) will resolve all CM issues and comments made by the TRB and present resolutions at the second TRB meeting.

6.3 Upon acceptable resolution of all comments, the TRB will indicate concurrence of the Preliminary Design package and/or CM items.

6.4 Upon concurrence of the Preliminary Design package as indicated in TRB minutes, all supporting documentation will be sent to ECDC for processing and "Configuration Management" of PG-3 and higher SSC documents. (I. e., PG-2 & PG-1).

7.0 PROCEDURE

7.1 PROGRAM MANAGEMENT

PROJECT ENGINEER (PE)

1. As part of the development of the project functional requirements, identify the scope and boundaries of the Project, all existing FEMP Facilities that will be impacted by the planned scope of the Project, and all existing and required technical documentation. (ref: Site Procedure ED-12-4001, Functional Requirements Package and Table 1, Typical "Configuration Management" Documents).

2. As part of the development of the Project Execution Plan, identify the CM implementation activities for the Project under the Project Specific Requirements element. (ref: Site Procedure "MS-1021, Project Management") These activities should describe programmatic, organizational, and procedural interfaces. (See Attachment A, CM section guidelines)

3. As planning proceeds identify the specific Activities that will accomplish the scope of the Project, and develop a list of SSC that will be utilized or impacted (ref: Site Procedure ED-12-4015, "Performance Grading")

7.2 DESIGN REQUIREMENTS

PROJECT ENGINEER (PE)

1. Utilizing the Hazard Category for the Facility/Project (as identified in the SA) and the list of Activities and SSCs generated previously, evaluate SSCs in accordance with Site Procedure ED-12-4015, "Performance Grading".

Note: Upon completion of Preliminary (Title I) Design, the Preliminary Design Package including all project Activities, and all SSC with their PG and Material Condition and Aging Evaluations (as required) will be submitted for TRB review.

2. Identify Activities with SSCs in PG 1, 2, or 3 as "Configuration Management" to all project team members.

3. As the Design develops, identify if any existing information requires Design Reconstitution. If so, go to Section 7.6 for additional guidance.

4. As the Design Package (ED-12-4004) is completed, verify that all "Configuration Management" items have been identified.

7.3 DOCUMENT CONTROL

PROJECT MANAGER (PM) / PROJECT ENGINEER (PE)

1. For Activities with SSC in PG 1, 2, or 3, assure that documents developed or revised during Design are identified, verified, and controlled by CM requirements.

Note: Once approved by the TRB, the PG identified for each SSC will become the basis for implementation of CM and application of a Graded Approach (a graded degree of application of regulatory driven programmatic, management, or administrative systems) by FDF operating Divisions participating in the project. Activities with SSCs in PG 1, 2, or 3 will be controlled under CM during Definitive (Title II) Design, Construction (Title III), Start up, Project Closeout, Operation, and future D&D. The specific means for implementing CM and applying a graded approach within participating operating Divisions will be specified in CM implementing procedures developed by them.

7.3 DOCUMENT CONTROL (cont.)

PROJECT ENGINEER (PE)

2. Identify Activities with SSCs in PG 1, 2, or 3 as "Configuration Management" to all project team members.

Note: The CM element of the Project Execution Plan should identify how "Configuration Management" documents will be handled.

3. After new "Configuration Management" documents or groups of documents are verified route them to ECDC for stamping, logging, and issuance as "Configuration Management" documents. Drawings shall identify Performance Grade 3 or higher SSC items and include "Configuration Management" identification in the notes before sending to ECDC.

ENGINEERING/CONSTRUCTION DOCUMENT CONTROL (ECDC)

4. Upon receipt of the TRB Evaluation and supporting documentation, log into the database, stamp the supporting documentation as "Configuration Management", place the original in an approved file, and issue controlled copies as directed by the PM/PE.

Note: For Activities with SSC assigned PG 1-3, any engineering/design documents generated and/or revised subsequent to Preliminary (Title I) Design review will be controlled as approved under the requirements of CM. The TRB Evaluation provides concurrence of the Performance Grading and/or direction for modification and is not a Configuration Management document.

5. Stamp, log and file new "Configuration Management" documents received from the PM or PE, and distribute in accordance with the Document Distribution Matrix received from the PM/PE or designee.

7.4 CHANGE CONTROL

Note: Project Impact Assessment is performed per Site Procedure ED-12-5002, "Engineering Design Change Processes". This section of the procedure interfaces with that decision point.

Changes to any "Configuration Management" documents shall be identified, documented, and evaluated for impact. Depending on the PG level of the SSC, and on its impact on technical baselines, the change will require varying levels of authorization (ref: Attachment B, CM Change Control Matrix).

7.4 CHANGE CONTROL (cont.)

Note: Changes to "Configuration Management" documents can come from many sources (design/engineering, construction, procurement, nuclear safety, operations, maintenance, regulatory, or administrative/executive) and result in varying degrees of change. Any change (or proposed change) to a "Configuration Management" document must be documented and formally evaluated for impact.

ENGINEERING/CONSTRUCTION DOCUMENT CONTROL (ECDC)

1. Control the issuance of "Configuration Management" documents such that "informational" copies can be distinguished from a controlled approved document as identified in the CM element of the Project Execution Plan.

Note: The number of documents issued by ECDC should be limited to that listed on the Distribution Matrix.

2. Issue additional "Configuration Management" documents only on written request/notification by the PM/PE.

3. Stamp, log and file revised or changed copies of "Configuration Management" documents only by formal transmittal from the PE.

PROJECT ENGINEER (PE)

4. Prepare a list of all SSCs which are "Configuration Management".

5. Issue the "Configuration Management" SSC list to all Activity participants including representatives from the functional FDF Divisions represented on the TRB.

Note: All Divisions will use Site Procedures for addressing and approval of Change Control documents. These change control processes will include controls for notification to the PM/PE of proposed changes impacting "Configuration Management" Activities, SSCs, or documents.

6. Upon documented notification of a proposed change to a "Configuration Management" document, evaluate and document the impact of the change on the Facility, Activity and/or SSC as applicable. Utilize the ED-12-5002, "Engineering Design Change Processes" as guidance.

Note: Changes to verified designs, as implemented through Site Procedure ED-12-5002, "Engineering Design Change Processes", will require design verification commensurate with that applied to the original design. The impact

7.4 CHANGE CONTROL (cont.)

assessment includes an engineering evaluation of the change on the overall design basis which may include Unreviewed Safety Question (USQ) Determination or technical review of Technical Safety Requirements (TSR).

7. Identify the impacted "Configuration Management" document(s), assemble a CM Change Control Package (CMCCP) containing the same type of documents as originally submitted (i.e., Performance Grade Evaluation Form).

8. Submit the CMCCP to the TRB for approval in accordance with this procedure.

PROGRAM COACH - ENGINEERING SUPPORT SERVICES (M-ESS)

9. Review/approve the CMCCP in accordance with the CMCCP Processing Matrix and return it to the PE for action or submit to the TRB.

TECHNICAL REVIEW BOARD (TRB)

10. Review/approve the CMCCP in accordance with the CMCCP Processing Matrix and return it to the PE for action.

PROJECT ENGINEER (PE)

11. Route the approved CMCCP to the Design Organization for revision of impacted documents.

DESIGN ORGANIZATION

12. Incorporate the required changes to the "Configuration Management" documents, sign the DCN, and return the documents to the PE.

PROJECT ENGINEER (PE)

13. Upon receipt of the revised documents, verify the required changes are accurate and complete, accept the DCN and the CMCCP indicating revisions are complete and verified.

14. Revise the SSC list, and transmit the revised "Configuration Management" documents to ECDC.

ENGINEERING/CONSTRUCTION DOCUMENT CONTROL (ECDC)

15. Stamp, log and file the revised "Configuration Management" documents.

7.5 ASSESSMENTS

FAM-CM

1. Assures that documents developed or revised during Design are controlled by CM requirements. Assigns Project Engineer to perform assessment.

PROJECT ENGINEER (PE)

2. Assesses the CM program on an annual basis and implements upgrades as necessary to ensure the CM program continues to meet its objectives. Review audit findings which relate to CM and determine trends which can be indicative of problems in the CM program.

3. Plan and document review of program compliance with established procedures, instructions, drawings, and other applicable documents.

4. Perform both horizontal and vertical assessments in evaluating the CM program. A horizontal assessment is the evaluation of a single program element (e.g., change control, document control, etc.) across multiple Configuration Items (CI). A vertical assessment is the evaluation of all the program elements as they pertain to a given CI or group of CIs.

5. Proceduralize the reporting of findings, the tracking of dispositions, and the corrective action processes to be taken, including verification of corrective actions.

6. Determine whether the SSC requires evaluation of Material Condition and Aging (MC&A), and if so, the extent to which MC&A should occur per Section 7.7. Document the list of SSCs requiring MC&A evaluation.

7.6 DESIGN RECONSTITUTION

The objective of the Design Reconstitution (DR) adjunct program is to establish, organize, and document design information (design requirements and design basis) where existing design information is not adequate. This section may be performed as applicable.

Note: Based on the PG for a SSC, the need for and extent of Design Reconstitution activities will be evaluated utilizing Design Reconstitution Determination Matrix (Attachment C). The basic utility (gas, water, electric, steam, air) delivery systems supplying FEMP Facilities will be reconstituted as a site wide integration effort. In accordance with Site Plan PL-3035, new projects should not require DR.

7.6 DESIGN RECONSTITUTION (cont.)

PROJECT ENGINEER (PE)

1. Utilizing Design Reconstitution Determination Matrix (Attachment C), determine whether the SSC requires Design Reconstitution, and if so, the extent to which Design Reconstitution should occur. Document the list of SSCs requiring Design Reconstitution.

2. For SSCs requiring Design Reconstitution refer to the Design Reconstitution Determination Matrix and, as required, perform Step a:

    a. Formal Review, assembling all existing and readily available summary design documents (such as SA's, SAR's, (Technical Safety Requirement) TSR's, etc.) for the impacted SSC;

    b. Smart Search, assembling those design/engineering documents (drawings, specifications, valve lists, operational setpoints, maintenance and test procedures, constructions and installation requirements, etc.) that are most likely to contain design requirements (this step shall include recovery of any existing as-built information) for the impacted SSC;

    c. Comprehensive Search, assembling any remaining documents that may contain design information (design analyses, calculations, DOE correspondence, supplier correspondence, engineering reports, input source documents, etc).

3. Number the documents assembled above and screen them to determine:

    a. Which documents actually contain design information relevant to the SSC being considered;

    b. Whether technical review is required to extract the design information contained in the documents.

4. After the design source documents are identified and screened, review each document and extract and document the relevant design information they contain. This should be done by engineering personnel with expertise in the system or discipline being reviewed.

5. Identify the extracted design information to the specific SSC to which it applies. (A checklist format is the recommended method to document this step.)

7.6 DESIGN RECONSTITUTION (cont.)

6. Assign an independent, technically equivalent individual to verify that the extracted design information is accurate and that no design information was overlooked during extraction.

DESIGN ORGANIZATION

7. Verify (refer to Site Procedure ED-12-4010 for verification requirements) the extracted design information to validate that it:

   a. Is technically appropriate and correct;

   b. Is based on valid assumptions and design bases;

   c. Was produced under design methods that are still appropriate;

   d. Is still appropriate to the current design and physical configuration.

8. Document any concerns or deficiencies, and assure resolution (refer to Site Procedure QA-0001 for Deviation Reporting guidance).

9. Sign, date, and submit to Project Engineer.

PROJECT ENGINEER (PE)

10. When design verification is complete and acceptable, release the verified design information and assembled documentation to ECDC as "Controlled" Design Basis Information.

11. As required, identify any critical design information (requirements or bases) that must be regenerated and initiate design regeneration by:

    a. Performing a re-analysis, i.e. a redesign by applying the design process to determine design requirements, or;

    b. Gathering and documenting information from the experience of knowledgeable engineering and operation personnel familiar with the SSC, or;

    c. Re-enacting the original design process to decide which outputs are essential and which are optional, or;

    d. Performing functional and/or qualification tests and evaluating the results against acceptance criteria that conform to design basis requirements.

7.6 DESIGN RECONSTITUTION (cont.)

12. As required, prepare and issue a Design Information Summary (DIS) for each impacted Facility containing:

    a. SSC description(s) including boundary and interface information;

    b. SSC operability requirements;

    c. SSC design bases and requirements;

    d. SSC operating requirements and parameters;

    e. Any other design information appropriate to the Activity, SSC or impacted Facility.

13. Route the DIS to the Design Organization for information and ECDC for logging and filing.

7.7 MATERIAL CONDITION AND AGING EVALUATION

The objective of the Material Condition and Aging (MCA) adjunct program is to apply methods and procedures, as applicable, to:

1) Extend a Configuration Item's (CI) lifetime when the desired lifetime is greater than the remaining lifetime and the CI's life limiting components are cost prohibitive to replace.

2) Establish testing and monitoring programs for CIs which are susceptible to departure from their design envelope due to aging degradation.

Note: Based on the PG for a SSC, the need for, and extent of Material Condition and Aging Evaluation(s) will be determined utilizing the Material Condition and Aging Determination Matrix (Attachment D). In accordance with PL-3035, most CIs will not require application of the Material Condition and Aging program due to the limited remaining lifetime of the FEMP. At a minimum, the basic utility (gas, water, electric, steam, air) delivery systems supplying FEMP Facilities will be evaluated as a sitewide integration effort.

PROJECT ENGINEER (PE)

1. Utilizing the Material Condition and Aging Matrix, determine the extent to which the SSC associated with an Activity require Material Condition and Aging evaluations.

7.7 MATERIAL CONDITION AND AGING EVALUATION (cont.)

2. Generate a list (Master Equipment List) identifying all Components, both active and passive, within the impacted Facility.

3. Screen the list of Facility components to identify those whose failure would have a major cost, safety, or programmatic impact on the project Activities. These components shall be denoted as potential life-limiting components.

4. For each potential life-limiting component perform an Aging Degradation Evaluation by inspecting each component, evaluating its current condition, and based on available data and engineering judgement identifying its major aging degradation mechanism.

5. Estimate the remaining life of the potential life-limiting components in categories:

   a. Use as is.

   b. Use after performing preventative maintenance.

   c. Use after a complete re-build.

6. Based on the shortest estimated lifetime of component, determine the estimated remaining lifetime of each impacted structure/system and ultimately that of the impacted Facility.

7. If the estimated lifetime of any SSC or impacted Facility is less than the desired lifetime (the time the SSC or Facility must remain operational until scheduled Safe Shutdown and/or D&D Activities can begin), propose life extension techniques that will make it possible to operate the SSC beyond its normal lifetime. Possible techniques include:

   a. Operational changes (reducing period of operation, decreasing number and rate of shutdowns/startups, etc.)

   b. Hardware/Facility modifications

8. Document the above Material Condition and Aging Evaluation for each SSC as required, and include as part of the Preliminary (Title I) Design package.

9. Forward a copy of the Material Condition and Aging Evaluation to the Design Organization for information and ECDC for logging and filing as a "Controlled" document.

8.0 RECORDS

The following records will be generated as a result of this procedure:

8.1 Copies of the TRB Committee actions. (Meeting minutes, recommendations, etc.)

8.2 All other correspondence directing action will be processed per Site Procedure ED-12-5001, "Engineering/Construction Document Control".

9.0 DRIVERS

1. RM-0012, "Quality Assurance Program"
2. RM-0016, "Management Plan"

10.0 DEFINITIONS

Activity - A specific set of operations or related tasks to be performed (e.g., characterization, design, dismantling, and overpackings).

Change - An alteration or addition, temporary or permanent, to the facility physical configuration, facility documentation, or design requirements. Changes not within current design requirements involve design changes. Identical replacements are not changes.

Configuration Management (CM) - The management process that assures consistency among the technical baseline, design requirements, physical configuration, and technical documentation, and the maintenance of this consistency through design, construction, operation, and Decontamination & Decommissioning (D&D).

Design Change Control - A documented process applying technical and management review and acceptance of changes to technical, schedule and cost baselines.

Design Change Notice (DCN) - A document used to identify, formalize a request for, or provide changes to an approved design drawing, specification, or other governing document. It has the same authority as a revision to the affected document when approved by the design organization.

Design Documents - Those documents that define either the design requirements or the design basis of the facility. Design documents include design specifications, design criteria, feasibility studies, conceptual design reports (CDRs), design drawings, design analyses, setpoint calculations, summary design documents, vendor submittals, correspondence with DOE that provides design commitments, and other documents that define the facility design.

10.0 DEFINITIONS (cont.)

Design Reconstitution - The identification, retrieval, evaluation, verification, validation, and/or regeneration of missing or incomplete design requirements or information.

Engineering/Construction Document Control (ECDC) - The system by which ALL active engineering documents are identified, controlled, distributed, and maintained during the course of a project and maintains the RCI/DCN system after facility turnover.

Functional Requirements Document (FRD) - Those technical data and other project information developed during the project identification phase. They define the project scope, requirements, design parameters, applicable design codes, standards, and regulations; applicable health, safety, fire protection, safeguards, security, energy conservation, and quality assurance requirements; and other requirements. The project functional criteria are normally consolidated into a document which provides the technical base for any further design performed after the criteria are developed.

Impact Assessment - An assessment that evaluates the impact of a System, Structure, Component, or change thereto on the technical, schedule, and/or cost baselines.

Performance Grade (PG) - the classification of a system, structure or component associated with a nuclear or non-nuclear facility in terms of:

1. Safety Considerations involving the consequences of its failure to prevent or mitigate the release of radioactive materials or energy, or hazardous materials, and

2. Life-Cycle Considerations involving the design life or intended use/consequence of the SSC or Activity, and

3. Mission Importance Considerations involving the consequences of its failure impacting schedule delay, stakeholder reaction, or project cost, and

4. Complexity Considerations involving the degree of regulatory, design, construction, process, and/or management coordination required.

Note: The later two considerations are Management Considerations which will be evaluated by the Technical Review Board (TRB).

Project - A project is a unique major effort within a program which has firmly scheduled beginning, intermediate, and ending date milestones; prescribed performance requirements; prescribed costs; and close management, planning, and control. A project is a basic building block which could include D&D in relation to a program which is individually planned, approved, and managed. A project is not constrained to any specific element of the budget structure (e.g., operating expense, plant projects, and/or capital equipment). Construction, if required, and closeout is part of the total project.

10.0 DEFINITIONS (cont.)

Project Engineer (PE) - An engineer responsible for document preparation, coordination, and/or performance of engineering functions for a project. A signature by the Project Engineer indicates that the issues involved with USQ, CM, CP, and interdisciplinary reviews have been resolved.

Project Manager (PM) - A functional position in which the designated person is in charge of managing and directing the project functions to which they are assigned. An experienced individual assigned to coordinate, integrate, and/or oversee activities for a specific project including scope, cost, schedule, quality, and customer/participant satisfaction. (See Site Procedure MS-1021, "Project Management")

Structures, Systems and Components (SSC) - Structures are elements that provide support or enclosure such as buildings, free standing tanks, basins, dikes, and stacks. Systems are collections of components assembled to perform a function such as piping, cable trays, conduit, or HVAC. Components are items of equipment such as pumps, valves, relays, or elements or a larger array such as computer software, lengths of pipe, elbows, or reducers.

Technical Review Board (TRB) - A core of technically experienced senior individuals from key functional areas who are responsible for technical review and approval of project activities, systems, structures and components including concurrence on the application of the graded approach process.

TABLE 1 - TYPICAL CONFIGURATION MANAGEMENT DOCUMENTS

This is a sample list of documents that may be selected for control under Configuration Management (CM) and application as SSCs are evaluated in PG 1-3. The list is not all-inclusive, nor is it a minimum set of require items. Its purpose is to make Project Managers aware of types of items to be considered when Configuration Management control is required.

1. System descriptions (or equivalent documents)

2. Component and material design, installation, and procurement specifications (e.g., piping specifications)

3. Drawings

    a. Plant layout, area, or general arrangement drawings

    b. Process flow diagrams (PFDs)

    c. Fluid system flow diagrams

    d. Piping and instrument drawings (P&IDs)

    e. Logic diagrams

    f. Embedded utility drawings

    g. Isometric dimensional and stress drawings (piping, conduit, HVAC, etc.)

    h. Hanger and support details

    i. Vendor drawings for plant components (e.g., valve and pump dimensional cutaways)

    j. Anchor, embed, and rebar details

    k. Equipment location drawings

    l. Instrument location drawings

    m. Architectural drawings

TABLE 1 - TYPICAL CONFIGURATION MANAGEMENT DOCUMENTS (cont.)

3. Drawings (cont.)

   n. Security drawings

   o. Service environment chart (10 CFR 50.49 EQ Program)

   p. Fire barrier drawings

   q. Fire zone area drawings

4. Design criteria

   a. Functional Requirements Document

   b. Conceptual Design Report

   c. Design Criteria Package

5. Design baseline analyses and calculation

   a. Seismic

   b. Hydraulic

   c. Thermal (including HVAC)

   d. Stress

   e. Transient

   f. Flooding

   g. Diesel generator loading sequencing analyses (including voltage and frequency profiles)

   h. Cable raceway routing and loading analyses

   i. Breaker coordination

   j. Environmental and seismic qualification

TABLE 1 - TYPICAL CONFIGURATION MANAGEMENT DOCUMENTS (cont.)

5. Design baseline analyses and calculation (cont.)

   k. System interactions

   l. Radwaste system design basis calculations

   m. ASME code design reports

6. Procedures, guidelines, and acceptance criteria

   a. Utility engineering practices, procedures, and standards

   b. Surveillance test and inspection (e.g., ISI, IST, Non-Destructive Test)

   c. Operating and maintenance

   d. Emergency and off-normal conditions

   e. Construction inspections and tests

   f. Acceptance criteria

   g. Inspection procedures

ATTACHMENT A

GUIDELINES

The purpose of this Configuration Management (CM) guideline is to provide direction in the implementation of CM principles at the Fernald Environmental Management Project (FEMP) as contained in the Project PEP described under Project Specific Requirements.

Section 1 contains the introduction to this document. It describes the purpose of the document including a synopsis of what is contained within each section.

Section 2 describes the strategy used in implementing the CM program. CM program implementation will occur in four phases. Each phase is described in Section 2.

Section 3 lists the responsibilities which pertain to the CM program. These responsibilities are broken down by responsible party.

Section 4 describes the specific actions necessary to implement the CM program. The actions are broken down into the four phases of CM implementation.

Section 5 contains the schedule for implementing actions. This schedule lists the responsible party and assigns a target date for completion to allow meeting of site milestones in the implementation of the CM program.

ATTACHMENT B

CONFIGURATION MANAGEMENT CHANGE CONTROL PACKAGE (CMCCP)—PROCESSING MATRIX

IMPACT OF CMCCP	PM/PE	M-ENG	TRB (including Nuclear Safety)
Facility HC may require change (regardless of HC assigned).	R	R	A
SSC PG requires change.			
From PG 5 to PG 4	R	A	X
From PG 5 or 4 to PG 1-3	R	R	A
From PG 1-3 to PG 4-5	R	R	A
From PG 4 to PG 5	R	A	X
PG requires no change and existing PG is 1 - 3.	R	A	X
PG requires no change and existing PG is 4 - 5.	A	X	X

A = APPROVE R = REVIEW X = NO ACTION REQUIRED

ATTACHMENT C

DESIGN RECONSTITUTION DETERMINATION MATRIX

PG	Formal Review	Smart Review	Comprehensive Review	Regeneration of Design Requirements	Preparation of DIS	Regeneration of Design Basis
PG 1	R	R	R	R	R	R
PG 2	R	O	O	O	O	O
PG 3	R	O	X	O	X	X

R = Required O = Optional (recommended) X = Not Required

ATTACHMENT D

MATERIAL CONDITION AND AGING PROGRAM—DETERMINATION MATRIX

MCA FUNCTIONS	PG 1	PG 2	PG 3	PG 4	PG 5
Component Screening	R	R	R	O	X
Aging Degradation Evaluation	R	R	R	O	X
Estimation of Facility Remaining Lifetime	R	R	R	O	X
Feasibility of Continued Operations or Extended Lifetime	R	R	O	O	X
Detailed MCA Analysis					
Component Screening	R	R	O	X	X
Aging Degradation Analysis	R	R	O	X	X
Definition of Physical Characteristics and Measurements	R	R	O	X	X
Baseline Measurements	R	R	O	X	X
Facility Remaining Lifetime Determination	R	R	O	X	X
Feasibility of Continued or Extended Operations	R	O	X	X	X
Degradation Trending, Aging, Management, and Life Extension					
Establish Monitoring Requirements	R	O	X	X	X
Trend Data and Update Lifetime Determinations	R	O	X	X	X
Life Extension Techniques	AN	AN	AN	X	X

R = Required O = Optional (recommended) X = Not Required AN = As needed